Soil Conservation

September 1979

U.S. Department of Agriculture

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Dam the Gully; Full Pond Ahead 10

Renovation Gets Its Stripes 20

From the Administrator

EEO—The Challenge Remains

Equal opportunity must be far more than a letterhead slogan in employment, advancement and professional growth, and service to the public.

It must be far more positive than simply a lack of discrimination.

The Soil Conservation Service is effective in helping the many segments of American society manage natural resources because it has a diverse work force in kinds of people as well as in kinds of technical disciplines. I am proud of the capabilities we have and the efforts we have made to increase them.

Yet, when national studies clearly show that some minorities have not made the overall social and economic progress hoped for in the past decade, we need to be a little dissatisfied with our own contribution toward equality, and to do our part to advance it.

When the makeup of too many agency meetings still makes it appear that our staff and clientele are largely of one race and one sex, we need to be a little disappointed that our progress has not been faster, and to reemphasize the challenge.

Secretary Bergland and I are personally committed to setting goals and reaching equitable numbers of minorities and women in the SCS staff in each State, to make our employment mix more nearly comparable to the population mix in each State.

These annual and long-range goals can be reached only with a fresh commitment from every SCS supervisor, with full support of conservation district officials and our other partners.

The process does not *begin* with hiring: SCS has worked closely with individual high schools and colleges and with the 1890 Land Grant University system to interest more young people in conservation careers, to strengthen their academic study, and to give them summertime experience in soil and water conservation.

The result: Many more highly qualified young people who truly can fill a position instead of a quota.

The process does not *end* with hiring: Many SCS supervisors have given imaginative leadership through the upward mobility and other training programs—and in everyday work—to help employees build their skills, their team spirit, and their professional future.

The result: More people better trained for the work they do, better prepared for more responsible positions.

Working together, I believe we can attract and motivate the kinds of "person-power" needed for *all* the jobs that we share in meeting America's social and environmental goals. It is one of our highest priorities.

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Soil Conservation

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- **Back—Lorraine Stanelle, a secretary for SCS in the Georgia State office, gives another viewpoint on conservation in the article beginning on page 12.**

A DC's Work Is Never Done

SCS District Conservationist Sheila Miller takes a contour reading in preparation for staking farmer Glen Miller's land for stripcropping.

"We have to be well trained in all areas of conservation—that's what is expected in the field," said Sheila Miller, Soil Conservation Service district conservationist (DC) for Lackawanna County, Pa. "We have to be knowledgeable in plant materials, field office management, information activities, agronomy, forestry, and soil science. We're everything all rolled up into one."

Along with Dick Kitchen, soil conservation technician, and Peter Zakanycz, soil conservationist, Sheila directs SCS activities in this northeastern Pennsylvania County.

A 5½-year veteran of SCS, Sheila's background includes assignments at four SCS field offices and 3 years in her current DC post.

"We really need to try and help these farmers," Sheila said. "And one way to help is through the application of conservation practices.

"There are some people we can never reach. But a lot of times people see what's happening to their farms, get very disgusted with it, and say this can't go on," she continued. "It just takes a little bit of time. First, you have to get them to believe that you know what you're talking about; next, you have to show them what you're talking about; and then by word of mouth it gets around to other farmers who might be having the same problem."

In Lackawanna County much work is needed in surface mine reclamation, erosion and sediment control, stormwater management, and nonpoint source pollution or 208 planning.

"In order to do a good job, we have to get to know the people, to be part of their community, and show them that we care what happens to their farms and community." Sheila cares, and

by Ted Kupelian

most of the local district cooperators know that she cares.

Glen Miller is one. Glen, a dairy farmer and cooperator with the Lackawanna County Conservation District, has a 25-acre field that for years had been farmed as one large field providing no real erosion control. Sheila explained to him the principle and benefits of contour stripcropping and, with the aid of her coworkers, staked out the land for stripcropping. Glen Miller was thankful for the conservation assistance.

"We need to keep in mind why SCS was established in the first place," Sheila explained. "Right now we are working on many different programs, but we should always remember the need for assistance to farmers and the agricultural end of conservation planning that is our mainstay."

Northeastern Pennsylvania is coal country and Lackawanna County has its share of problems associated with coal mining. "Every time we get a rain, coal waste washes off into streams and there is mine water everywhere," Sheila said. "It's a real problem, but mined land stabilization with adapted plant materials has helped us out a lot."

Sheila is also evaluating the results of a project in which SCS participated to demonstrate the value of treated municipal sludge as a soil conditioner and fertilizer for the revegetation of lands disturbed by coal mining activities. Properly treated and stabilized sludge is a valuable resource which can be recycled and utilized. A 10-acre demonstration site in Scranton was one of several such projects being conducted throughout the State.

The results from this project show that treated municipal sludge can be used to reclaim barren disturbed land with no adverse effects on the vegetation or ground water quality and no risks to animal or human health.

Most of Sheila's field activities consist of visiting farmers to discuss conservation planning which meets their individual needs and solves their conservation problems and to explain cost-share programs or anything new in conservation that may help them.

Constant communication is the key. "We like to keep in touch with our people and line up work for next year," Sheila explained. "We like to keep ahead and get some conservation practices staked out and designed during the winter.

"But snow cover is a real problem. We can't work in the field too much from November through March, so that's when we have more time for updating records and scheduling next season's work by writing letters, making phone calls, or making personal visits.

"What's been happening the last couple of years," Sheila concluded, "is that by word of mouth people find out about us and our programs. More people are aware that we are around."

Mr. Kupelian is a writer-editor, Information Division, SCS, Washington, D.C.

Miller tries to get as much field work in as she can before snow comes to northeastern Pennsylvania.

From City to Field Office

by Enid Yurman

In October 1978, Diane Reinhardt became Missouri's first woman Soil Conservation Service district conservationist at the Unionville field office in Putnam County. In over 3 years with SCS, Reinhardt has worked in four different counties and feels that she knows northwestern Missouri well.

Although she grew up in a city, Reinhardt decided on a career in conservation while still in high school. "Conservation is pretty much my nature," she said. "I try to live it in my personal life."

She says that she developed her love of nature and concern for the land during the many hiking trips her family took in national parks all over the country. She also did some traveling in Europe where she was impressed by the great numbers of people walking and bicycling.

Reinhardt received a bachelor's degree in agronomy in 1976 from the University of Missouri at Columbia. She first learned about SCS from guest speakers in her water management and soil conservation courses. Since the agency's mission seemed to fit in with her goals and background, she decided that working for SCS was the next logical step. She worked part time at a field office during her last semester, then, after graduation, she plunged into a full-time career with SCS.

"Working in the field office in Harrison County was my first time in the 'real world,' " said Reinhardt. "It wasn't always pleasant; for example, I wasn't used to the gruffness of some of the men or the tremendous workload in the field."

Besides the exposure to different conservation practices, Reinhardt also learned the art of "small talk" with the farmers. "Talk about such things as the weather is really a way of communication for the farmers," she explained. "They're talking about their livelihood." She enjoys working with the farmers and finds their flow of talk and sense of humor refreshing.

From Harrison County, Reinhardt moved to Livingston County where she spent the next 14 months under the skillful supervision of District Conservationist Lyle Noblitt. Reinhardt is grateful for the excellent model Noblitt provided by his friendly attitude and firm assertiveness.

In her present job as district conservationist in Putnam County, Reinhardt thoroughly enjoys her new responsibilities of supervision, administration, and management. In accepting a position with more responsibility, she maintains that a woman does have to work harder to prove herself and her professionalism.

When farmers ask her, "Are you one of those women libbers? Have you started chewing tobacco yet?" Reinhardt kids right back with them. She knows that when they see her setting up her instruments and answering

SCS District Conservationist Diane Reinhardt is using a level to stake out a farm pond. She signals to the rodman that she has taken a reading and that he can move on while she records the numbers.

their technical questions, her competence will erase any doubts. She's learned to be assertive and at the same time accepting of whatever she faces; she "lets changes come at their pace."

One important practice Reinhardt works with the farmers on is pasture management. "In our area, overgrazing is a big problem," she explained. She's trying to generate some interest in warm season grasses and has persuaded one farmer to use seed obtained from an SCS plant materials center. Reinhardt hopes this will serve as a demonstration plot and example to other farmers.

Another concern is soil mapping and interpretive soil information for Putnam County. "Everything's based on soil—it's the basis for planning and engineering." Reinhardt is currently trying to drum up the interest of local residents.

Her most important goal in her work is conservation education. "It's important to help people's thinking to begin with rather than try to change their attitudes once they're set in their ways," she explained. "I enjoy working with the children—as well as the adults—and being a model for the girls. I like to share my enthusiasm with them and show rather than tell them what conservation's all about."

Reinhardt is working hard to establish and implement a conservation education program in the Putnam County schools. She initiated a project at one grade school. Everyone, from kindergartners on up to teachers and principal, was involved in planning and constructing a five-row windbreak. Reinhardt explained to the children that in planting a different species of seedling in each row, the smallest species is placed on the windward side, normally following the order of shrubs, conifers, and then hardwoods. Reinhardt also explained the reasons for the windbreak, including wildlife cover and shelter from the wind, and made a point of stressing the multiple-purpose nature of conservation practices. She hopes to get a couple of outdoor classrooms started there.

"My advice to others interested in starting programs in conservation education is first to establish contact with the different State agencies that can provide funding, and with foresters, wildlife specialists, and other experts for technical assistance," said Reinhardt. "Then 'sell' yourself to school officials, be available to these different people, and get input from them."

Diane Reinhardt is excited about her work in SCS, and looks forward to the challenges and rewards in making people aware of the great need for conservation.

Ms. Yurman is a writer-editor, Information Division, SCS, Washington, D.C.

Reinhardt examines a hayfield with a farmer to determine the proper time to cut the hay based on the physiology of the plant species. Timing in cutting can make the difference between coarse, unpalatable hay and hay that has more protein and is of a better quality.

Hard-Working Conservationist

Mary Rose, according to SCS District Conservationist Carrol Tyler, is equally at home working with her cattle, managing her household, or, as shown above, fixing a leaky clean-out valve in her irrigation system.

Overseeing 300 acres of farmland, managing 100 head of cattle, and serving as chairperson of the board of supervisors of the North Side Soil Conservation District (SCD) are jobs many people would avoid—but not Mary Rose of Jerome, Idaho.

Rose is the first woman supervisor of a soil conservation district in Idaho and the first woman in the State to be elected chairperson of a board of supervisors.

She thrives on hard work and doing her bit for the "space she occupies." Rose's philosophy is "we all have a certain due for the privilege of living in a democracy," and conservation of the Nation's natural resources is high on her list of personal responsibilities.

Each of the seven supervisors of the North Side SCD is head of a committee. Rose, besides serving as chairperson of the district board, is head of the district operations committee.

As head of the committee, Rose develops the long-range plan for the district's soil and water conservation program, develops the district's annual work plan, and reviews the district's monthly work plan. Her other duties include reviewing conservation plans and long-term agreements.

The other six committees are resource planning, information activities, legislature, conservation education, finance and property, and the committee for activities related to the Soil and Water Resources Conservation Act (RCA) and to reducing nonpoint source pollution of streams and rivers, or 208 planning.

"It's a cooperative effort," said Rose. "We all work together and keep each other informed of district activities. The board members are super

people and they are a real pleasure to work with. They are all truly dedicated conservationists."

RCA, passed by Congress in 1977, is a continuing evaluation program that the Soil Conservation Service and conservation districts will be involved in for the next 5 years. John Ottman, North Side SCD board member and head of the RCA and 208 planning committee, is in charge of conducting public meetings in the district to secure citizen participation.

"We are anxious to receive citizens' comments through RCA," said Rose. "Through the public meetings we can find out what direction the people want the district to take in conservation. RCA will give us an accurate analysis of conservation problems and an outline to use in attacking the worst problems most effectively.

"One of the major concerns of almost all the citizens in the North Side SCD is the noncompatibility of housing developments and farm operations," said Rose. "People in subdivisions next to farms complain about the noise and smell, while traffic and litter from the subdivisions conflict with farm operations." Rose is helping lead the effort to resolve the conflict over the use of land in Jerome County.

Citizens are also concerned about the spiraling costs of land, machinery, energy, and other items associated with farming. They are concerned about pollutants in the Snake River, sediment and other pollutants in irrigation return flows, weed control, the depletion of wildlife habitat, the use of off-road vehicles, and the effectiveness of government programs.

As part of its 208 work, the district is concentrating on solving critical erosion and sedimentation problems in the Hazelton Butte area. The area is used mostly for growing potatoes and is steep and intensively irrigated. The potatoes are harvested in late fall and the heavy machinery used for harvesting compacts the soil. The compacted soil freezes and winter rain storms cannot soak into the ground. The rain runs off carrying precious soil with it to streams and rivers. Some of the sprinkler irrigation systems in the area also contribute to erosion and sedimentation.

According to Carrol Tyler, SCS district conservationist in Jerome, the district is promoting deep chiseling on the contour. It opens up the soil so water can soak in instead of running off. The district is also promoting irrigation water management, sediment basins, and better cropping systems such as crop rotations of alfalfa and other grasses with the potatoes to improve soil tilth and fertility.

"We have been in contact with the farmers in the Hazelton Butte area," said Rose, "and their cooperation is excellent. Some practices that will probably be used are fall seeding, contour plowing, and redesigning sprinkler systems. Some people are even experimenting with different methods of harvesting potatoes.

"I feel the biggest challenge facing districts today is allocating time in order to fulfill responsibilities under RCA and 208 and still remain effective in serving individuals," said Rose. "District services to the individual landowner are a critical part of what we do on a local level. It's important for districts to set priorities to get everything done—to be most efficient."

Girl Scout activities, Rose says, sparked her interest in conservation. Mary Rose first became acquainted with SCS and the North Side SCD when she and her husband, Wesley Rose, an optometrist, began farming in Jerome County. Through the district, SCS provided them with technical assistance in setting up irrigation water management practices and pasture management.

Rose and her husband work as a team in managing their 100 head of Charolais cattle. But, when it comes to farming their 300 acres of hay, corn, and grain, Mary is in full charge.

"Mary Rose is equally at home driving a tractor, managing her household, irrigating cropland, discussing cattle management, running a board meeting, or making a presentation at the State Convention of Soil Conservation Districts," said Tyler. "I have worked with many soil conservation district boards and she is an outstanding chairperson."

"Making a contribution toward improving conservation is the most rewarding thing about my work with the North Side SCD," said Rose. "I feel I get a lasting result for my energies."

Based on an article in the *North Side News*, Jerome, Idaho, March 29, 1979.

Satisfaction Comes from Solving Problems

SCS Soil Conservationist Jeanette Barnett (left) makes field notes as she surveys for a pond site. Farmer Rosalyne Bledsoe (right) requested assistance from SCS in locating and designing the pond to provide erosion control, livestock water, and recreation.

Soil Conservationist Jeanette Barnett enjoys helping people solve problems on their land. Barnett joined the Soil Conservation Service in Columbia, Mo., in May 1976 after graduating from the University of Missouri at Columbia. In February 1978, she was assigned to the Miller County field office at Tuscumbia.

At the university, Barnett's major area of study was horticulture, but she also took courses in agricultural engineering and agronomy. Coming from a farming background, Barnett said, "I was surrounded by agriculture people most of my life, and had always raised my own gardens and read a lot of gardening literature."

Barnett puts her training and experience to good use by advising landowners on how to better manage their land. Her biggest satisfaction comes from "going out on a farm which has an ugly erosion problem, suggesting a suitable solution, and then seeing the conservation improvements completed."

On one project, she assisted Rosalyne Bledsoe, who wished to get rid of a gully by constructing a pond to supply water for her cattle. Barnett's first step was to help Bledsoe study the site and decide on the size of the pond needed.

When Bledsoe expressed an interest in stocking the pond with fish, Barnett advised that the Missouri Department of Conservation could provide them. Barnett pointed out that the dam would have to be high enough to provide at least 10 feet of water for the fish. Barnett then laid out the exact bounds of the future water impoundment. Water levels are established to provide minimum depths needed for fish and to cover the active area of the gully.

The next step was to stake the core

trench which the conservation contractor would dig. This is a long ditch, which runs under the dam site. The trench is dug deep enough to expose all sand, gravel, or other material which would allow water to leak past the dam site. The core trench is backfilled and the dam is constructed of good clay and carefully compacted to form a watertight seal. A principal pipe spillway is installed to let the excess water out. An emergency spillway is also installed around one end of the dam to handle extreme floods.

The pond water is piped through the dam to a stock water tank. A filter strip of grass is seeded around the pond. The area is then fenced to protect the water and grass strip from the cattle. The pond provides soil erosion control, water for livestock, fish habitat, and recreational benefits.

Another example of conservation practices that Barnett helps landowner's install is animal waste lagoons. Lagoons are used for livestock confinement operations and in Miller County usually for hogs. The waste matter is flushed from the hog house and feeding floors out to the anaerobic lagoon. These lagoons are built to certain dimensions to insure proper bacterial action to break down the waste. When the lagoon fills up, normally once or twice a year, the landowner will pump the lagoon effluent to a soil plant filter which, in that area, is usually pasture. The effluent fertilizes the pasture through an irrigation system such as a traveling gun which shoots it out onto the land.

Besides ponds and lagoons, Barnett also helps design and lay out diversions and waterways, assists landowners in selecting seeding mixtures for their pastures and managing them, and gives advice on streambank erosion control. She writes a biweekly column for the local papers in which she tries to weave a conservation angle around various topics of interest to the county folks. Barnett explained that they don't do much terracing since it's not a cropland area. Miller County is made up of trees on the steeper slopes and pasture on the gentler slopes.

Another important part of Barnett's job is helping landowners develop resource conservation plans. Developing plans is time consuming, but is vital to help people successfully apply conservation practices.

Barnett takes the time to define the role of SCS as a technical assistance agency and to explain to the landowner the relationship of SCS to conservation districts and to the Agricultural Stabilization and Conservation Service, which provides the funding for conservation practices.

Barnett also tells the landowners about various interagency programs available to them. One is an excellent arrangement, under a memorandum of understanding, between the soil conservation district and the Missouri Department of Conservation. On a first-come-first-served basis, 12 new cooperators can sign up each year to get a mix of milo, millet, and soybean seed provided by the department. The cooperator is given enough to plant one-quarter of an acre which will produce wildlife food in the winter. This program serves as an excellent inducement to get more wildlife food and cover on the land. SCS provides the cooperator with planning assistance in applying to this program.

Jeanette Barnett enjoys her co-workers who have found her to be a competent, dedicated employee. As for the farmers, Barnett says that "you couldn't ask for a better group of people to work with." Barnett stated simply that her own goals are to give people the best service that she can.

Based on an article in the *Eldon Advertiser*, Eldon, Mo., April 5, 1979.

A New Look at Conservation

by Lorraine Stanelle

Employees in the Soil Conservation Service State office in Athens, Ga., who do not usually travel or spend time in the field are getting the chance to find out about field office operations. Each employee has been assigned to spend a week with a district conservationist and do the kind of work that field personnel usually do.

Participants report that the field experience has been valuable. The State office employees are coming back with a greater appreciation for the tasks of field personnel and a better understanding of their own role in our conservation mission. In the following article one of the State office employees shares her experience in the field.

Lorraine Stanelle holds the surveying rod for SCS District Conservationist Johnny Mattox as they conduct a construction check on a farm pond.

I left my office in Athens to spend a week in the Soil Conservation Service field office in Hall County, Ga., to try to learn something about conservation practices applied to the land. SCS has a long list of conservation practices. What could I learn in 1 short week? Quite a lot!

One widespread conservation practice I observed was conservation tillage. Most of the row cropping done in Hall County is done by the conservation tillage or minimum tillage method. In using this method, wheat or rye is planted in late fall or early spring and as soon as it's high enough, it is cut for silage. The stubble is then sprayed with chemicals to stop its growth, and corn is planted directly into the stubble without reworking the soil. This provides a mulch to hold the moisture and prevents wind or water erosion of the soil. It also saves time and fuel.

Another conservation practice I looked at was streambank protection along Little River. Several years ago, the river and its tributaries suffered damage from an extremely severe flood. The rushing waters eroded the streambanks, causing them to actually fall into the streams and block them. SCS personnel walked the streambanks to assess the damage and determine where the streams needed to be cleared and the banks protected. One method of protection they recommended was riprapping or, as I explained to my fellow office workers, laying stones along the banks of streams to hold the soil in place.

I noticed as we drove from place to place that most of the roadsides in Hall County have already been seeded and stabilized. They look great! There are no more ugly gullies with mud washing down onto the highways.

One afternoon I helped some of the SCS field people survey a 200- by 250-foot area for a waste treatment lagoon for a dairy operation. We divided the area into 50-foot squares and put a flag at the corner of each square. We set a temporary bench mark and gave it an assumed elevation. Then we determined the elevation (or depth) at each flag. With this information we were able to determine how much water (or sewage) the area would hold. The temporary bench mark can be used to stake and check the lagoon. We also took some soil borings which revealed good moisture-holding clay.

Another place we visited was a farm with 40,000 laying hens. This landowner also needed a waste treatment lagoon. SCS field people had already surveyed an area in front of the building, but after studying their findings, they and the landowner decided an area at the back would be more suitable.

Depending on whom you talk with, Hall County is the largest chicken-producing area in the State, the United States, or the world! I'll go along with the largest in the world. I've never seen so many chickens, both hens and broilers.

We stopped to talk with a landowner who has 300 head of beef cattle and the largest vineyard in Hall County. He also keeps a dozen or so turtles for eating. I was told a turtle has seven different kinds of meat and is absolutely delicious. Some day I may find out, but I'm not in any hurry.

I learned how a cutoff, sometimes called a keyway or core trench, for an earth dam is laid out, how to survey a waterline for a lagoon and a farm pond,

and how to survey in woods through thick underbrush, around trees, and across gullies. I felt fortunate that neither spiders, wood ticks, chiggers, mosquitoes, nor snakes bit me. Not even poison ivy laid a finger on me. It was a great day!

Another afternoon I went with the SCS people to Upper Mulberry River Watershed Site No. 8 where a dam is being built to create a lake. I helped them set stakes on the slope of the dam, measuring (with the level again) upward from each of the previously set stakes, and then sinking a hub stake to the correct elevation. This hub will be used for the next series of stakes to be set further up on the slope. The contractor who is building the earth dam uses these stakes as a guide in mounding the soil for the dam.

We also took a compaction test of the soil in the dam. These tests are taken at frequent intervals; in fact, this was the 52d test. We determined that the soil was being packed solidly and was neither too dry nor too wet. If too dry, the soil tends to "fluff" and not pack down; if too wet, it tends to "slide" because the moisture keeps the soil apart.

SCS people give technical assistance to individuals, corporations, educational institutions, and units of county, State, and Federal governments. Some of the conservation practices I saw, but missed helping with, were working with a landowner to decide the best place for a farm pond, and helping another landowner stock his pond with baby catfish.

We took a quick look at Hall County's Alberta Banks Park, where SCS people had provided assistance on site selection for three baseball fields and developed vegetative plans for the park. We also took a quick look at Gainesville Junior College, where SCS people helped turn a critical area into a useful and attractive pond, and where they had designed a water disposal system, diversion terraces, and a drop chute. They also gave Hall County assistance with leachate ponds, sediment basins, water disposal systems, and vegetative plans for the landfill.

We took a little longer look at Lake Lanier Islands. This is a beautiful 1,200-acre park, federally owned and State operated, where you can swim, fish, ride horses, take a boat tour, play golf, and rent a houseboat or a cottage. SCS people helped with the vegetation plan for the roads inside the park, soil information, and laying out ponds for rainbow trout.

I learned the purpose of conservation practices is to protect both the soil and the water. Keep the two separated. Keep the streams clean and clear. Don't work the soil to death; treat it gently and keep it covered with grass, crops, trees; it will support all these and more.

For someone who spends day after day in an office, I learned quite a lot during my week in the field and enjoyed every minute of it.

Ms. Stanelle is a secretary, SCS, Athens, Ga.

Stanelle checks the amount of mulch left in soybeans planted using conservation tillage.

Women's Conservation Tour

by Lynn J. Post

SCS Soil Conservation Technician Stella Mumme maps the route for the women's conservation tour. She planned stops to show the women various conservation practices which were successfully carried out by local farmers and ranchers.

"Many women can and do effectively manage farm and ranch operations," said Stella Mumme, a Soil Conservation Service soil conservation technician in south Texas.

Some of the women that Mumme worked with in the Medina Valley Soil and Water Conservation District (SWCD) had inherited farms and operated them alone or with their families, and some women were divorced or widowed and had suddenly found themselves totally responsible for managing a large ranch or farm.

Mumme recognized that the women in the district had special conservation needs. Many times people would take advantage of the inexperienced women farmers and ranchers by overcharging them for work done or advising them to make unsound management decisions.

Mumme took her concern to the SCS staff and the Medina Valley SWCD board of directors. They decided to set up a conservation tour designed especially for women. The SWCD sponsored the tour and SCS personnel helped plan and conduct it.

In May 1978, 150 women attended the district's annual ladies conservation tour. It was advertised on the radio and TV, in newspapers and the district's newsletter, and by personal contact. A San Antonio TV station even sent a crew to cover it.

The women viewed sites demonstrating irrigation farming, critical area treatment, brush management, range management, wildlife habitat management, and fishpond management.

They observed one system of irrigation farming which included the use of an irrigation well and an irrigation reservoir. "In growing corn there are certain critical times when the plants need

water to assure proper growth and production," Mumme told the women. "Water from the well is pumped into the reservoir and at critical growth times the corn can be irrigated from both sources, allowing farmers to irrigate more acres at the same time."

Also at the irrigation farm the women saw crop residue left on the soil surface to break up raindrop splash and improve soil tilth and fertility. Leaving the residue instead of grazing it or plowing it under, the women learned, protects the soil. Also, when the stubble decays, it is incorporated into the soil as mulch.

When cattle graze streambanks in Medina County, they strip the grass and leave woody brush which provides little protection for the soil. In places, deep rills and gullies, 5 to 20 feet wide, have formed. The women on the tour viewed a site where streambanks had been shaped to lessen the slope and planted in 'Coastal' bermudagrass to stop erosion.

"When you plant small sprigs of bermudagrass which already have roots instead of seeding it, the grass sends out runners faster to hold the soil," said Mumme. "Also, 'Coastal' bermudagrass does not produce viable seed."

Another problem for farmers and ranchers in south Texas is the infestation of blackbrush, whitebrush, and other woody plants. These plants rob moisture from grasses, block the sunlight, and prevent cattle from grazing what could be good pastureland.

The women on the tour discussed three ways of controlling brush that are being used in Medina County. One way is clearing out the brush with a bulldozer and stacking it and burning it. The land is then plowed and raked to pull up the roots and the area is sprigged or seeded. To prevent soil loss until the grass takes hold, this method is usually used in summer or winter, if possible, when rainfall is the lightest.

Another method is aerial spraying to kill the brush. A third method, similar to aerial spraying, does not disturb the soil or the grass that is already growing in an area. Pellets of a chemical are spread from the air or with a ground spreader. The pellets are activated by rainfall and the chemical is taken up by the roots, killing the brush plants.

But whichever method of controlling brush is used, SCS recommends leaving strips of brush and other cover for wildlife habitat. Quail, dove, wild turkey, javelina, deer, and other wildlife common to the area need cover.

At the fishpond management site on the tour, the women discussed the construction of fishponds and tanks and what needs to be considered in choosing a site for either. They learned that a fishpond needs to be fished to promote production. It was noted that fishponds are also used for watering livestock and wildlife.

"The Medina Valley SWCD's ladies conservation tour gave the women farmers and ranchers conservation and management information they needed and provided them with an opportunity to discuss their problems and concerns with other women involved in farming operations," said Mumme.

"Whether these women are managing a farm or ranch alone or with their families, they have a tremendous responsibility and they are looking for help. Through the tour, SCS and the Medina Valley SWCD told the women the kinds of assistance they could give them and encouraged them to join the conservation effort."

Most of the women attending the tour owned from 5 to 10,000 acres of land in Medina and surrounding counties and most of the women were cooperators with the Medina Valley SWCD. The women ranged in age from 16 to 80 years old. Some came from as far away as Oklahoma City, Okla., and Austin, Houston, and San Antonio, Tex., to attend the tour.

Mr. Post is soil conservationist, SCS, Hondo, Tex.

At one stop on the tour, Stella Mumme and Vernon Grunewald (left) join with irrigation farmer Jack Hendley (right) in explaining proper application of water to corn.

Check the Soil First

It's Good Business

by Gene Warren

Opening the first mobile home park in Fenton, La., was a dream come true for Herbert Keyes.

Besides holding down a full-time job in Lake Charles, Keyes had dabbled in farming with his father, Bailey, on the family's 40-acre farm and had worked on building up a herd of 15 cattle.

"But cattle prices dropped, and in 1977 I got together with my brothers and sisters and suggested the trailer park," said Keyes. "All of us pooled our finances, and we began putting the park into shape."

The mobile home park is on 8 acres of the family farm. The rest of the land is in soybeans and pine trees. Keyes said he put a lot of thought into the project before he drove the first stake or put down money for financing.

"To tell you the truth, I looked at a lot of trailer parks and talked to many people before I made the plunge," he said. "What really sold me on the idea was that there were no trailer parks in the area. I figured I could make it if I went at it the right way."

Keyes and his father were already cooperators with the Gulf Coast Soil and Water Conservation District and had learned about the limitations of some soils. So one of the first things Keyes did in planning the trailer park was to call on Soil Conservation Service District Conservationist Terry Clement. Clement went over the land and discussed with Keyes soil types, drainage needs, and certain plants adapted to the area.

Based on the soil information Clement provided, Keyes selected a tree-covered area that was well drained and firm enough to support the weight of the trailers.

"One thing I learned was that shade on trailers can cut the use of electricity in the summer by as much as 50 percent," Keyes said. "You see, most parks I visited had no trees. I figure my trees are a drawing card. If a fellow can see he can park his trailer in the shade in my park and can save money on his electricity bill, well, chances are he's going to come to me."

Keyes completed the park in mid-July of 1978. He has locations for 25 trailers. "Anything more than 13 trailers will be profit," he said.

On Clement's recommendation, Keyes planted most of the park area with bermudagrass. Under the trees in the park he planted shade-tolerant St. Augustine grass.

Clement also helped Keyes determine the best site for an oxidation pond for the park. Sewage from the trailers flows into the pond for aerobic treatment.

"You have to make the area pretty," said Keyes. "Attractiveness is important. I plan to put a recreation area next to the park and build a washateria and recreation hall within the next year or so."

Keyes' 12-year-old son, his nephew, and his sister help take care of the park grounds.

Keyes says he hopes to make the park stand on its own and bring in enough to support his family. "When that happens, I plan to work full time at my business." He says that working at home will allow him to become more active in the community. Already he is coach of the community's Little Dribblers basketball team, and has helped the team win the State championship. Keyes is active in his church and works closely with the 4–H Clubs.

"I want to do more but can't when I work so far away from home," said Keyes. "I figure that a good-paying business will help me be a better citizen in the community."

Herbert Keyes has come a long way from the days when he was raised in a two-room farmworker's house. But the way he sees it, a fellow with a dream will work mighty hard to make it come true. That, in fact, is what Herbert Keyes has done.

Mr. Warren is public information officer, SCS, Alexandria, La.

SCS District Conservationist Terry Clement (left) and Herbert Keyes examine bermudagrass that Keyes established on his mobile park land. Clement recommended a shade-tolerant grass to be planted under the trees.

Farmer Controls Erosion Woes

Reprinted from the *Statesboro Herald*, Statesboro, Ga., May 2, 1979.

by Jerry Hancock

E. B. Lee and his wife, Sarah, take time out from their farming operation to do some gardening around their home.

Faced with troublesome erosion of his cropland, E. B. Lee, Jr.—a Bulloch County, Ga., farmer—recognizes the value of soil conservation farming operations as a boost to production.

Lee began farming in 1946 as a sharecropper and in 1951 bought his first 50 acres of farmland.

Lee then realized his steep, sloping cropland was washing away. He became concerned about it. Needed plant nutrients were washing from the soil, and the rough terrain hindered his equipment.

"The washes were so bad you could hardly cross them with a tractor," Lee said. The fields were losing topsoil at an annual rate of 12 tons per acre.

In 1953, Lee found out about the Soil Conservation Service. As a cooperator with the Ogeechee River Soil and Water Conservation District, he received technical assistance from SCS in planning and designing a water disposal system of terraces and grassed waterways.

This terrace system along with proper conservation cropping systems adequately controlled the erosion problem on Lee's field for 15 years.

However, in 1968 after changing to four-row equipment, the terrace system was redesigned. Parallel terraces were constructed and waterways were shaped and established to grass.

In 1977, SCS assisted Lee with planning and designing an additional waterway, and in 1978 Lee installed another parallel terrace and grassed waterway system on another cropland field.

In the meantime, Lee has bought additional farmland and presently owns 170 acres and rents other cropland. Corn, soybeans, peanuts, tobacco, and hogs give him a diversified farming enterprise.

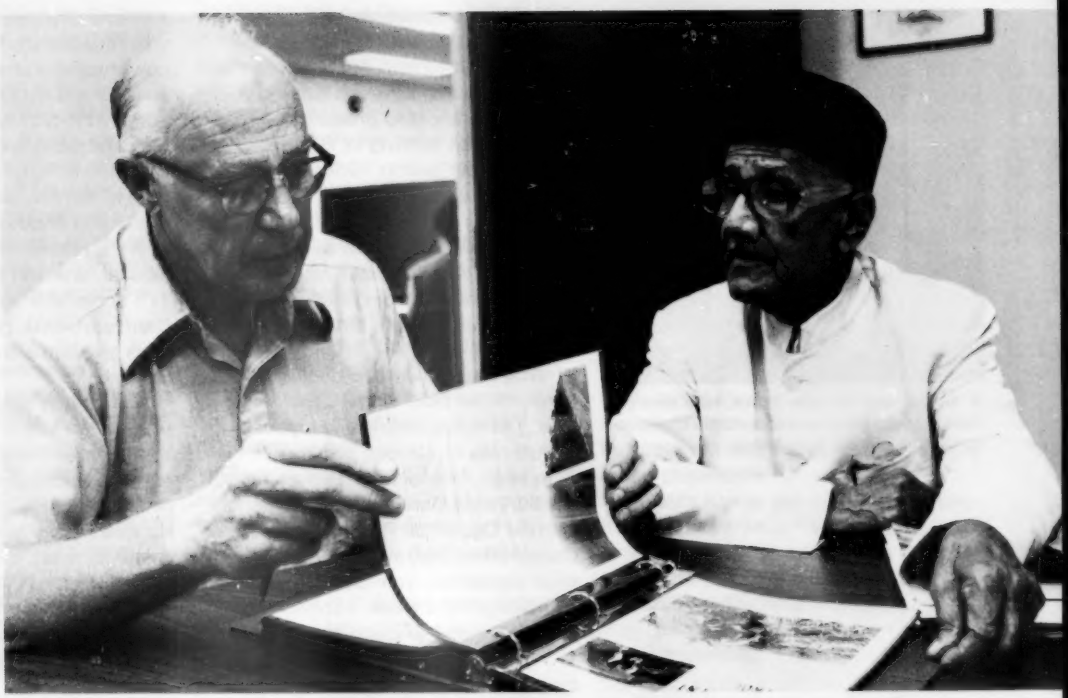
More water disposal systems are planned for Lee's cropland. Also, with the increased need for irrigation in stabilizing farm incomes in Bulloch County, he is planning to construct farm ponds. He said he will ask for SCS assistance in site location, design, and checking construction of the ponds.

"It is a pleasure working the land after conservation improvements have been installed," said Lee.

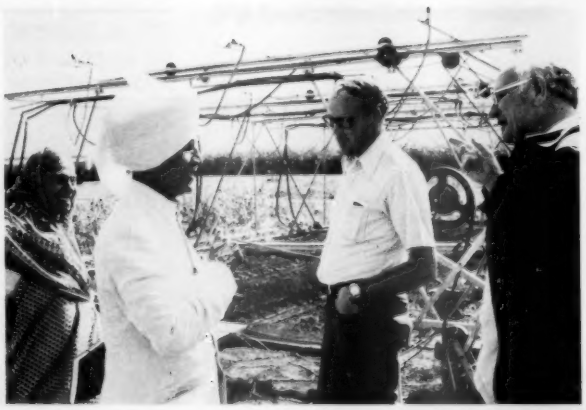
Mr. Hancock is district conservationist, SCS, Statesboro, Ga.

Lee checks the growth of young corn plants on terraced land. He expects a higher yield because his parallel terraces reduce erosion, retain runoff water, and improve farmability.

Taking Soil Conservation to India



SCS State Conservationist Harry Major reviews progress in Minnesota soil and water conservation work with Madhavro Shirole.



Mr. and Mrs. Shirole discuss the operation of a rainulator used in soil erosion research with agricultural research staff at the North Central Soil Conservation Research Center.

by Thomas C. Gahm

Thirty years ago several States in India began soil conservation programs modeled on the ideas of Hugh Hammond Bennett, father of soil conservation in the United States and first Chief of the Soil Conservation Service.

Madhavro Shirole was the person who translated Bennett's ideas into action in India, after he visited the United States to study under Bennett and other conservationists during 1946 and 1947.

In 1978 Shirole returned to the United States for the first time since his training with Bennett. Now retired, the 80-year-old Shirole's visit this time was personal rather than official, but his interest in learning all he could about new developments in soil conservation research, planning, and application apparently had not waned. He wanted to talk about conservation and compare notes on how conservation technology in the two countries had progressed during the last 30 years.

The SCS State Conservationist for Minnesota, Harry Major, gave Shirole an overview of SCS conservation planning procedures and progress in the various SCS programs in Minnesota and throughout the country. He arranged for Shirole and his wife to visit an SCS field office and some district cooperators' farms. Since Shirole was also interested in research, Major made appointments for him with the Minnesota Agricultural Experiment Station and USDA's Science and Education Administration's North Central Soil Conservation Research Center at Morris.

Keith Huston, director of the experiment station, and Robert Holt, director of the research center, filled Shirole in on the latest State and Federal research. Shirole said he would put what he learned to good use in his present position as a consultant to soil conservation programs in his home State of Maharashtra in western India.

He collected dozens of soil conservation publications. "I carried cartloads of Soil Conservation Service literature back to India with me in 1947," he said.

Shirole had completed 12 years of formal agricultural education and 4 years of soil conservation study prior to his training under Bennett. During his orientation to American soil conservation he visited several Southern and Midwestern States, working with a district conservationist about 6 weeks at each location before moving on. He said it gave him a good picture of agriculture and conservation practices.

"Climate and soils in northern India are similar to the southern United States," said Shirole, who worked in conservation throughout much of India. "Southern India has a lot of rocks and gullies." He explained that conservation needs in India are particularly critical, due to "4,000 years of erosion with little attention to conservation. The land has been neglected for so many centuries, you can't expect it to change overnight."

Shirole was intrigued by a display at the research center which showed the root system of a corn plant. He said Indian farmers would be amazed at the depths corn roots grow to here, because in many areas of India only a few inches of soil cover the bedrock. "The topsoil is completely washed off many of the hilly areas," he said.

During the monsoon season in India, it is not uncommon to get up to a foot of rain in 2 hours. Shirole said farmers rely on small dams and "percolation tanks" to store excess water and "broad-based low bunds," an Indian version of terraces, to control runoff on slopes. "You can see some wonderful terracing in India," he said.

Shirole said the average farm in his country is about 10 acres and the typical farmer lives in town and commutes to his fields daily. Conservationists help the landowners develop "contour plans," he said. "They result from a give-and-take discussion with the farmer and fit the individual farm operation. Farmers don't want many terraces, and they don't want them very large because of the small farm size," he added.

Shirole explained that conservation systems in India are applied over an entire watershed. By law, if the owners of 60 percent of the land in a watershed want erosion control, the others are required to participate also. He described government funds for soil conservation in India as scarce, but said that the government pays one-third of the landowner's conservation treatment cost. Low-interest, 15-year loans are available for the rest. Farmers start paying the money back 1 year after they complete the conservation work.

There is no national soil conservation program in India, and Shirole said that not all States have programs. Each State administers soil conservation independently, and the programs focus on the major resource problems in each State. He said that many States are conducting soil surveys, a concept borrowed from the United States.

Mr. Gahm is public information officer, SCS, St. Paul, Minn.

More Ways Than One

Sullivan County, Tenn., is clearly pasture country. It has 100,000 acres of pasture and hayland, and less than 10,000 acres of row crops. Almost all the pasture acres lie on steep hillsides and the potential for soil erosion is high.

Because of the large amount of hilly grassland in the county and the erosion potential it presents, pasture renovation and conservation are top priority with the Sullivan County Soil Conservation District (SCD).

"In 1976 we decided that the main obstacle to pasture renovation in the county was the farmers' lack of suitable renovation equipment," said Carl Millsap, Soil Conservation Service soil conservation technician.

"So we sold the SCD's board of supervisors on the idea of purchasing a drill-type seeder and mounted spray rig. Farmers can rent the equipment from the district, and they can purchase improved varieties of seed and herbicides they need through the district."

Planting with the drill-type seeder leaves the soil virtually undisturbed and enables farmers to seed protein-rich, nitrogen-fixing legumes into sod in closely spaced rows.

The district's drill-type seeder has had a good workout in its more than 3 years of service. During February, March, and early April, which is the best time for seeding legumes into fescue in eastern Tennessee, there usually is a waiting list for the equipment.

"Farmer response has been tremendous," said James Ramsey, SCS district conservationist. "In the spring of 1978 we booked a lot more acres than we could handle, primarily because the long winter and wet spring had cut short the number of days we could use the equipment."

To get around the problem, instead of using the drill-type seeder, many Sullivan County farmers planted clover into fescue pastures by the spray-seed method. Because this method involves no tillage—just spraying in alternate bands with a contact herbicide and then broadcasting seed—it can be used when fields are too wet to plant with a drill. Farmers can kill 50 percent of the grass by spraying a contact herbicide in 4- to 10-inch bands. They can then broadcast seed the legume crop early in the growing season while moisture is plentiful. The spray-seed method of pasture renovation was developed by University of Tennessee researchers.

According to Joe D. Burns, Extension Service forage specialist at the University of Tennessee, demonstrations have shown that legumes will develop a vigorous stand in the bands where grass is killed, usually producing a pasture of roughly half grass, half clover.

Although most people in the beef and dairy business know that seeding clover into a grass pasture will increase both meat and milk production, little pasture renovation has been done. Some forage specialists think it is because renovation methods have seemed too costly and time consuming to bother with.

"Research promoting pasture renovation has been going on for the last 15 to 18 years," Burns said. "But it's just recently that we've come up with a really practical and simple chemical method of renovation."

Although the new method is commonly called the spray-seed technique, Burns has named it the "zebra" technique because of the brown stripes of dead grass it leaves in pastures until the clover comes up.

With spray seeding a farmer can renovate up to 100 acres a day using just a spray rig and a broadcast seeder. By mounting the broadcast seeder and herbicide applicator on a tractor, it becomes a once-over process.

The best months for renovation in eastern Tennessee are February and early March, because clover started early will be ready to graze sooner and will get through the summer months in much better shape. After mowing or grazing to remove excess pasture growth, Burns recommends testing the soil and applying the lime and fertilizer that the test indicates are needed. He recommends not using a nitrogen fertilizer because it will promote grass growth and delay clover establishment.

The next step is spraying. The contact herbicide should be applied in bands to 50 percent of the area of the pasture. Sprayed bands should be 4 to 10 inches wide and the same width as bands left unsprayed. In Sullivan County, renovation efforts have been most successful with an application of a contact herbicide sprayed in bands.

As soon as possible after spraying, simply broadcast the recommended clover seed mix onto the field and prevent grazing until there is adequate growth. After the new clover seedlings have reached their recommended grazing height of 4 to 6 inches, cattle may be allowed to graze the pasture. State Extension Service guidelines or other local sources should be consulted before choosing a seeding mix for a particular farm.

Other methods of pasture renovation have their benefits, but Burns can list many advantages to spray seeding. "In rocky fields you're not turning up more stone as you would if you used a disk,"

by Nancy M. Garlitz

he said. "And spray seeding leaves the pasture smooth. Smooth pasture makes it easier to get in there and mow or use other equipment."

Spray seeding also does not disturb the soil on steep hillsides the way disking or other tillage methods does, thus reducing erosion.

"In a heavy stand of fescue, you need to get rid of half of it to give the clover a chance," Burns said. "With spray seeding, you put the remaining fescue in rows. We've found we can maintain the clover a lot longer where the fescue is contained in rows.

"We've also found that compared to disking, we get added growth and higher yield in the first few months with spray seeding. The disk rips up all the fescue and disturbs the grass it leaves growing. The contact herbicide kills half and doesn't touch the other half. Clover yield is about the same for the two methods, but the grass yield is higher with spray seeding."

"Spring of 1978 was the first year we did much spray seeding in Sullivan County," Ramsey said, "and the results were very promising. Also," he added, "you can cover a lot more acres in a lot less time than with a drill, and that's important both to busy full-time farmers and part-time farmers with limited time to spend in the field."

Carl Millsap added that equipment requirements for spray seeding are minimal. "If you have access to a spray rig and a tractor—a small one will do—you're in business. Especially on steep, rough, or rocky land, spray seeding is the way to get the job done."

Comparing the two techniques of spray seeding and drilling, Ramsey said, "You'll get more clover plants established per acre with spray seeding, but you'll get faster germination and more vigorous young plants with a drill-type seeder."

Each method has its advantages and limitations, so farmers should pick the one that best suits their needs and the soil conditions. But, with either method a contact herbicide needs to be used to suppress the fescue and reduce the competition for legume seedlings.

"We've tried the drill-type seeder without using a contact herbicide," Ramsey said, "and the results weren't nearly as good. You need to suppress the grass competition; otherwise you could be just wasting seed and time.

"Although we've made good progress in renovating pastures in Sullivan County," Ramsey said, "we've got a long way to go. We've just scratched the surface of what can be done. Of our 100,000 acres of pasture, at least 50,000 could use renovation."

Ramsey said one reason he expects to see increased interest in pasture renovation from farmers is Public Law 92–500 and the Clean Water Act. The goal of the act is to make all lakes, streams, and rivers in the United States swimmable and fishable by 1983.

"By volume, soil sediment is the largest water pollutant we have in Tennessee," Ramsey said. Spray seeding to renovate pastures instead of disking protects the soil on steep grasslands by providing a protective cover of dead grass in the strips where clover is seeded.

Ms. Garlitz is assistant editor, *Soil Conservation*, SCS, Washington, D.C.

A farmer can mount a spray rig and broadcast seeder on a tractor and renovate as much as 100 acres of pasture a day in a once-over process.

SCS Programs Recruit Students

Introduction

The Soil Conservation Service is working hard to recruit minority students for employment in professional positions. New programs are springing up that tie into colleges and universities across the Nation. Richard A. Myers, chief of the Employment Branch at the national office, coordinates and develops these programs in cooperation with State and field office personnel. The programs include: student trainees, summer aids, and cooperative education for students in high school, 2-year colleges, 4-year colleges and universities, and graduate schools.

The various SCS student programs are designed for all students. Myers encourages the States to take advantage of these programs, however, to give more opportunities to minority students. The following articles give two examples of SCS programs in operation.

Reaching Out to High School Minority Students

For a number of years the Soil Conservation Service in Tennessee has worked closely with the Tennessee State University (TSU) School of Agriculture to increase employment of minorities. SCS has helped the TSU School of Agriculture improve its curriculum in order to meet SCS standards, and has recruited its students under a student trainee program. Through these joint efforts, the university has played an important role in supplying SCS with minorities for professional positions.

In 1977, SCS and TSU turned to a new source for recruiting: disadvantaged minority students at the high school level. Here was an opportunity to introduce students to the field of conservation of natural resources before entering college, and to spark their interest by offering them practical training at an SCS office.

The Summer Aid-Cooperative Education Program between TSU and SCS was established. This program is designed to hire disadvantaged minority high school graduates for summer jobs at an SCS office. In order to be eligible, the students must indicate that they are planning to attend TSU and major in agriculture, and are interested in careers with SCS. The students must also agree to work in a different State with SCS under the cooperative education program after they complete their freshman year at TSU. Under the summer aid–co-op program, the students work in the field with soil conservationists and learn the principles of conservation practices.

This program is beneficial to the TSU School of Agriculture in helping it reach disadvantaged minority students. The SCS program provides these students with some means to continue their education beyond the high school level, and benefits SCS by assisting it in placing high potential minority employees in States that have a difficult time in hiring minorities.

Graduate Students Become SCS Interns

Jackson State University in Jackson, Miss., has begun a graduate internship program with the Soil Conservation Service. This program, authorized in the summer of 1978, marks the first time SCS has established a cooperative education program at the graduate level. The program allows for graduate students enrolled in the school's Master of Public Policy Administration Program (MPPA) to work full time at an SCS office. Jackson State was chosen for the inaugural program because of the initiative of MPPA internship director, James Harvey, who is credited with establishing a relationship with SCS. At present, the internship program is being used as a means for increasing employment of minorities.

During a work period totaling at least 13 weeks at SCS, the graduate student receives on-the-job training in one of the administrative areas of either personnel, budget, or contracting and procurement. The student must complete the internship and turn in a report in order to earn the three credit hours allowed for the program. This internship program acts as a preliminary step to the SCS administrative trainee program. Upon receipt of his or her master's degree, the intern may be offered a permanent position in the trainee program if a position is available and he or she has performed the work at SCS satisfactorily.

The first student selected for an internship with SCS was Lydia Louie, who was recommended by James Harvey because of her ability to work well with people. Louie works in the Mississippi State office as a personnel management specialist under the supervision of Personnel Officer Henry Shaw. Shaw is primarily concerned that Louie be provided with an orientation to the policy and programs of SCS, and to personnel procedures in the government. Louie works on assignments in merit promotion, position classification, and appointment authorities, and accompanies Shaw to personnel meetings and presentations. Working full time during the day and taking two courses a week in the evening, Lydia Louie will complete the internship and receive her master's degree in December 1979, at which time she can be considered for a permanent position with SCS.

The graduate internship cooperative education program between Jackson State University and SCS is mutually beneficial. The graduate students get exposure to and practical experience at a Federal agency, while SCS is provided with a new source for recruiting in the administrative field.

Meetings:

September	
5–7	American Water Works Association, Chesapeake Section, Ocean City, Md.
9–12	International Association of Fish and Wildlife Agencies, West Yellowstone, Mont.
12–14	American Fisheries Society, West Yellowstone, Mont.
24–28	Federal Bar Association, San Antonio, Tex.
25–28	National Conference of Editorial Writers, Phoenix, Ariz.
26–30	The American Horticultural Society, Palm Beach, Fla.
30–Oct. 3	Farm and Industrial Equipment Institute, San Francisco, Calif.
30–Oct. 4	National Association County Agricultural Agents, Rapid City, S. Dak.
October	
3–7	American Horticultural Society, Portland, Oreg.
7–12	Water Pollution Control Federation, Houston, Tex.
10–12	Hardwood Plywood Manufacturers Association, Los Angeles, Calif.
12–18	American Association of State Highway and Transportation Officials, Hartford, Conn.
13–17	American Society of Planning Officials, Baltimore, Md.
14–17	Society of American Foresters, Boston, Mass.
16–18	Agricultural Research Institute, Washington, D.C.
20–25	National Environmental Sanitation & Maintenance Educational Conference/ Exposition, Clearwater Beach, Fla.
22–26	American Society of Civil Engineers, Atlanta, Ga.
25–28	National Association of Biology Teachers, Inc., New Orleans, La.
28–31	American Forestry Association, Charleston, S.C.
28–Nov. 1	Congress for Recreation and Parks, New Orleans, La.
31–Nov. 4	The American Society of Landscape Architects, New Orleans, La.
November	
4–7	The Irrigation Association, Marco Island, Fla.
5–8	The Geological Society of America, San Diego, Calif.
5–9	National Adult Education Association, Boston, Mass.
7–9	Future Farmers of America, Kansas City, Mo.
11–14	National Agricultural Bankers, Salt Lake City, Utah
11–14	National Association of State Universities and Land Grant Colleges, Washington, D.C.
11–14	National Forest Products Association, Palm Springs, Calif.
12–20	The National Grange, Lancaster, Pa.

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